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Central Valley Regional Water Quality Control Board

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VIA ELECTRONIC MAIL

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COMMENTS ON THE DRAFT *WATER QUALITY SCIENCE IN THE SACRAMENTO-SAN JOAQUIN DELTA PART 1: CHEMICAL CONTAMINANTS AND NUTRIENTS*

Thank you for the opportunity to comment on Water Quality Science in the Sacramento-San Joaquin Delta Part 1: Chemical Contaminants and Nutrients, draft for public comment. This document provides a valuable review of our understanding of major water quality issues in the Delta and pertinent directions for future work.

General Comments

The introduction states that the review, "…considers the scientific basis for assessing water quality in the Delta, and on how water quality information is being used in management decisions in the Delta…" The report provides excellent descriptions of the state of scientific understanding of all major water quality issues related to nutrients and contaminants. However, the document provides little description about use of the science in management decisions. Missing for each water quality issue is information about the status and needs of management decisions. Readers may assume that regulations and management actions are at the same point for each issue, which is not the case. For example, no regulatory control programs are directed at CECs and algal toxins. However, comprehensive regulatory requirements exist for management of mercury and some pesticides in the Delta. For each water quality issue described, the information needed by managers and policy makers to make further management decisions is different.

It would be helpful to expand on the finding that, "Adaptive management is rarely built into water quality programs." Of the questionnaire responses about adaptive management that were included in the document (pg. 28-29), three of five respondents identified their programs as incorporating adaptive management. It is not clear whether the report authors have a different view of adaptive management or other responses, which were not shared, overwhelmingly support the finding.

Detailed Comments

Pg. 3 line 21 and Pg. 8 line 24: Please explain the statement that the state and federal water contractors have been the primary funders of research and monitoring to protect water quality in the Delta. Is that the State and Federal Contractors Water Agency or a wider group? How long of a time period is being considered? Note that permit-required monitoring, research funded

through California bonds and outside granting entities, and monitoring by the Delta Regional Monitoring Program, the Water Boards and Department of Fish and Wildlife also contribute significantly to understanding Delta water quality. Projects funded through CALFED, the Ecosystem Restoration Program, USEPA 319(h) grants, Propositions 40, 50, and 1A, and the Delta Science Program itself have been relied upon for advancing scientific knowledge and management decisions. As one example, the Surface Water Ambient Monitoring Program funds monitoring of mercury in Delta fish.

Pg. 3 line 25: "Assigned" implies that broader involvement in water quality monitoring and protection could be achieved by better use of regulatory authorities. Note that in comparison with other estuaries in the USA and the Great Lakes, the Delta has received less federal funding for water quality monitoring and research. This has also impacted the pace of scientific understanding.

Pg. 4 line 10: The report appropriately calls for research into effects of multiple chemicals and contaminants with other stressors. Are there programs elsewhere that are developing good understanding of chemical and multiple-stressor interactions and how are they funded? The Delta Independent Science Board is uniquely positioned, in this report or in the future, to help identify good examples of multi-contaminant and stressor science and to support achieving similar results in the Delta.

Pg. 4 line 24 and pg. 12: The Delta Nutrient Research Plan (draft document 1/12/2018) and supporting white papers agree that more holistic research and data evaluation are needed. The Delta Stewardship Council itself directed funding to research on nutrient forms and ratios and ecological stoichiometry. While these funding decisions were in the past, the messages of Ward and Paerl 2016 have broad application: use a holistic study design and clearly identify the management needs behind the research.

Pg. 8 line 25: Unless accompanied by citation or quote, speculation about the future decisions and funding priorities of one particular entity (State and Federal Contractors Water Agency) does not meet the expectations of an objective review. Available resources and funding priorities of multiple entities are important for the outlook of Delta monitoring.

Pg. 9 line 32: Instead of “novel” pesticides, consider “recently-registered”.

Pg. 10 line 17: The words "may contribute" provide limited information without references. Please refer to CV SALTS proposed Nitrate Control Program, including priority geographic areas, for assessment of risks due to nitrates in groundwater.

Pg. 11 line 30: Readers may appreciate knowing that the Delta Regional Monitoring Program, in coordination with the DWR Municipal Water Quality Investigations Program, conducted two years of pathogen monitoring at selected sites. A final report is forthcoming. The pathogen monitoring plan can be found here on pg. 17:
https://www.waterboards.ca.gov/centralvalley/water_issues/delta_water_quality/delta_regional_monitoring/wq_monitoring_plans/drmp_fy1516_detailed_wrkpln.pdf

Pg. 13 line 10. Questionnaire responses supported collection of more high frequency data. Readers may be interested to know that investments in high frequency monitoring in the Delta have already increased. The Delta Regional Monitoring Program and the Delta Stewardship Council are currently funding collection of high frequency nitrogen data (sensors for

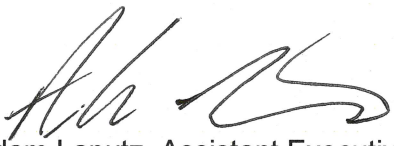
phosphorous are not available). Also needed are planning and technical guidance for interpreting high frequency nutrient data and integrating the data with other data sets.

Pg. 13 line 27: Absent the citation, a mention of a recent study about mercury toxicity to fish is not helpful for policy or management. The implication of this quote, that existing water quality objectives for mercury do not consider effects on fish or piscivorous birds, is incorrect.

Pg. 13 line 31. Please provide the full title of the 2003 mercury strategy to differentiate it from the regulatory TMDL and control program that went into effect in 2011 (See https://www.waterboards.ca.gov/centralvalley/water_issues/tmdl/central_valley_projects/delta_hg/index.shtml) The Bay Selenium TMDL is mentioned in the next section; parallel mention of the Delta Methylmercury TMDL could be included in this section.

Pg. 17 line 1: The review cites a 2016 Bay Delta Science Conference talk as the source of information about methylmercury and mercury mass balances for the Delta. The text implies that the mass balances are inadequate because of the age ("prior to 2008") of the data. Please edit the reference to provide the context given in the 2016 talk that new data should be used to update the mass balances in order to adaptively manage the Central Valley Water Board's Delta Mercury Control Program. The mass balances and existing regulatory control program were based on the best available science of that time.

If you have questions regarding these comments, please contact Janis Cooke at (916) 464-4672 or janis.cooke@waterboards.ca.gov.



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